

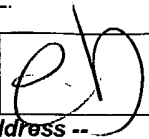


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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/622,942	08/24/2000	Brian John Bastable	111869-00113	5468
27557	7590	06/21/2004	EXAMINER	
BLANK ROME LLP 600 NEW HAMPSHIRE AVENUE, N.W. WASHINGTON, DC 20037			JOLLEY, KIRSTEN	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 06/21/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/622,942	Applicant(s) BASTABLE ET AL.	
	Examiner Kirsten C Jolley	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-44, 48-55 and 58-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-43, 50-55, 58-77 and 79-90 is/are rejected.
- 7) ☒ Claim(s) 44, 48, 49 and 78 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed March 29, 2004 have been fully considered but they are not persuasive.

Regarding the objection to the specification, Applicant argues that the third full paragraph on page 5 should be read in conjunction with the immediate prior paragraph which recites the formula $R-SiX_3$. Applicant states that, accordingly, one skilled in the art reading these paragraphs would have understood that an R precedes the chemical composition, particularly where immediately after the chemical composition $CH_2CH_2CH_2Si(OCH_3)_3$, the paragraph recites "where R is a reactive functional group and X is the methoxy group." The Examiner disagrees. The prior paragraph on page 5 states that $R-SiX_3$ is the general formula for the preferable compound $CH_2CH_2CH_2Si(OCH_3)_3$. One skilled in the art would have clearly understood that the compound $CH_2CH_2CH_2Si(OCH_3)_3$ fits the general formula of $RSiX_3$ whereby R is the reactive group $CH_2CH_2CH_2$ (and is an organofunctional group linked to silicon by a hydrolytically stable bond as taught in the prior paragraph) and X is the methoxy group OCH_3 (as explicitly stated in the quoted remainder of the sentence). There is nothing in the prior paragraph to indicate that an R should precede the chemical compound that is listed. Therefore, one skilled in the art reading the paragraphs on page 5 would not have understood that an R precedes the chemical composition. (The Examiner further notes that if, in fact, an R did precede the chemical as argued by Applicant, then the preferred chemical formula would *not* fit the broader formula described in the paragraph above it.)

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As discussed in the prior Office action (and repeated below), the chemical $\text{CH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$ is unstable and therefore remains objected to.

Regarding the objection to claim 59, Applicant argues that although claim 31 recites a single layer of thermoplastic, claim 59 recites layer or layers in the alternative, and therefore claim 59 is in agreement with claim 31. While the Examiner acknowledges that claim 59 recites a single layer or multiple layers, the Examiner maintains the objection because claim 59 is confusing because, since claim 31 requires "a single layer of a thermoplastic resin," there is specifically *not* a recitation of plural layers, and additionally because claim 59 does not properly further limit claim 31.

Regarding the rejection of claims 62 and 65 under 35 USC 112, 1st paragraph, Applicant argues that page 5, third paragraph, discloses RSiX_3 and $\text{CH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$ where R is a reactive functional group and X is the methoxy group, and therefore this disclosure clearly provides proper written description for the silane $\text{RCH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$. The Examiner disagrees and maintains the rejections for the reasons discussed above. Specifically, the prior paragraph on page 5 states that R-SiX_3 is the general formula for the preferable compound $\text{CH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$. One skilled in the art would have clearly understood that the compound $\text{CH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$ fits the general formula of RSiX_3 whereby R is the reactive group $\text{CH}_2\text{CH}_2\text{CH}_2$ and X is the methoxy group OCH_3 (as explicitly stated in the quoted remainder of the sentence). There is nothing in the prior paragraph to indicate that an R should precede the chemical compound that is listed.

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With respect to the 35 USC 112, 2nd paragraph rejections over claim 62, Applicant argues that “X” refers to the methoxy groups as referred to on page 5, third paragraph. The Examiner notes that it is improper for a dependent claim to further limit the *specification*, and not a claim. Since “X” is not recited in claim 62 (or a claim from which it depends), it is not clear to what “X” refers to one skilled in the art and thus the claim is vague and indefinite. Therefore the rejection is maintained.

With respect to the 35 USC 112, 2nd paragraph rejections over claim 65, Applicant argues that “X” and “R” are the same as those recited in claim 64. The Examiner maintains that claim 65 is still vague and indefinite because it is not clear whether the “R” in claim 65 and in claim 64 (from which claim 65 depends) are the same or different. If “R” is meant to be the same in both claims, then it is noted that the chemical formula $RCH_2CH_2CH_2Si(OCH_3)_3$ does not further limit the formula $R-SiX_3$ of claim 64.

Regarding the 35 USC 102(b) rejections over Cayless et al., Applicant argues that Cayless et al. fails to disclose that the pre-treatment layer resists corrosion. Also, Applicant argues that the coated surface in Cayless et al. is affixed to another metal surface which minimizes exposure of the coated surface to the environment, therefore corrosion is not a concern of this arrangement. It is the Examiner’s position that the pretreatment coating of Cayless et al. must necessarily resist corrosion because it comprises the similar materials and process steps of Applicant’s process. Any

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differences in properties between the claimed invention and that of Cayless et al. must have been caused by process variables not claimed in the instant application. The Examiner further notes that the rejected claims are broad enough to read on Cayless et al.'s process of pretreatment for adhesive.

Regarding the 35 USC 102(b) rejections over Amort et al., Applicant argues that Amort et al. fails to disclose a separate step of applying a coating of thermoplastic resin. Applicant states that the silane of Amort et al. is used alone or added to the organic polymer as a mixture. The Examiner disagrees. Amort et al. discloses in col. 1, lines 9-12, "This invention relates to the use of silanes having capped functional groups as adhesiving agent, *especially for between organic polymers and substances having inorganic oxide and/or metal surfaces*" [emphasis added]. Likewise, Amort et al. teaches in col. 1, lines 61-65, that a laminate comprising a metallic surface and a polymer is contemplated, said laminate having in the region of the interface between the metallic surface and the polymer a silane having a capped functional group. In col. 3, lines 21-24, Amort et al. states "Of special interest is the pretreatment of glass fabrics and fibers and of glass surface and metal surfaces *which are made into laminates with numerous organic polymers.*" The Examiner acknowledges that the quoted paragraphs of col. 3 disclose two alternative means for applying the silanes -- either alone or in combination with the polymer, as argued by Applicant. However, the rest of the reference clearly discloses that an organic polymer layer is applied over the silane layer (when applied on its own). Further, Example 1 is directed to an embodiment where the substrate is first treated with a silane adhesivizing agent and then with an epoxy resin as separate layers.

With respect to the 35 USC 103 rejections over Jones et al. or Heyes in view of either Cayless et al. or Amort et al., Applicant argues that there is no motivation to come Jones et al. or or Heyes with either Cayless et al. or Amort et al. because the polymers used are different. Applicant argues that because the polymers used are different, one of ordinary skill in the art would not have been motivated to use the yttrium or silane treatment of Cayless et al. or Amort et al. with the coating process of Jones et al. or Heyes, because there is no expectation that the yttrium of Cayless et al. or the silanes of Amort et al. would react in the same way with the polymers of Jones et al. or of Heyes. Applicant's arguments are unconvincing. The Examiner notes that Cayless et al. broadly teaches that it increases adhesion between metal substrates, specifically mild steel substrates, and organic polymeric coatings, particularly polymeric adhesives. Jones et al. teaches that the polymers of its invention are useful for adhesive applications (col. 2, lines 36-38 and col. 3, lines 23-24). Heyes teaches that *any* thermoplastic may be used in its invention, and additionally that adhesive may be used between layers of the laminate. Therefore, it remains the Examiner's position that it would have been obvious for one having ordinary skill in the art, seeing the references of Cayless et al. and either Jones et al. or Heyes in combination, to have used the pretreatment method of Cayless et al. before applying the adhesive/polymeric coatings in the methods of Jones et al. or Heyes with the expectation of improving adhesion between the mild steel substrate and the polymeric coating applied thereon. The test of obviousness is not express suggestion of the claimed invention in any or all references but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar

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with them. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183 (CCPA 1965); *In re Hedges*, 783 F.2d 1038.

Additionally, Amort et al. teaches that its silane pretreatment step improves the adhesion between metal substrates, including mild steel substrates, and “numerous organic polymers” (col. 3, lines 20-21). Also, as exemplary organic polymers, Amort et al. teaches the use of polyester resins (col. 3, line 1). It is noted that both Jones et al. and Hayes teach applying polyester resins. Therefore, it remains the Examiner’s position that it would have been obvious for one having ordinary skill in the art, seeing the references of Amort et al. and either Jones et al. or Heyes in combination, to have used the pretreatment method of Amort et al. before applying the polymeric/polyester coatings in the methods of Jones et al. or Heyes with the expectation of improving adhesion between the mild steel substrate and the polyester coating applied thereon. For these reasons, the rejections below are maintained.

Specification

2. The disclosure is objected to because of the following informalities:

On page 5, third full paragraph (as amended), the chemical composition $\text{CH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$ is objected to because it is not a stable chemical. If there is meant to be a single bond between the first C and second C, then the first C does not have enough bonds and there should be another H. If there is meant to be a double bond between the first C and second C, then the second C is bonded to too many H atoms. It appears that the chemical should be either vinylmethyltrimethoxysilane ($\text{CH}_2\text{CHCH}_2\text{Si}(\text{OCH}_3)_3$) or propyltrimethoxysilane ($\text{CH}_3\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$).

Claim Objections

3. Claim 59 is objected to because of the following informalities: Claim 59 recites “the thickness of the layer, or layers, of thermoplastic resin is/are”, however independent claim 31 from which claim 59 depends, requires only “a *single* layer of thermoplastic resin” [emphasis added]. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 62 and 65 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 62 and 65 claim the use of a silane having the formula $\text{RCH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$, which appears to be new matter. The specification, as amended, discloses use of the silane $\text{CH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$ (page 5) whereby there is not functional group R attached to the first C atom of the chemical. However, the Examiner notes, as discussed above, $\text{CH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$ is not a stable chemical. (If there is meant to be a single bond between the first C and second C, then the first C does not have enough bonds. If there is meant to be a double bond between the first C and second C, then the second C is bonded to too many H atoms. It appears

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that the chemical should be either vinylmethyltrimethoxysilane ($\text{CH}_2\text{CHCH}_2\text{Si}(\text{OCH}_3)_3$) or propyltrimethoxysilane ($\text{CH}_3\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$).

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 62 and 65 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 62 is vague and indefinite because there is no antecedent basis for "X" in line 4 and therefore it is not clear what "X" refers to. If claim 62 should be dependent upon claim 48 to provide antecedent basis for "X", then the Examiner notes it is further unclear whether "R" in both claims are the same or different.

Claim 65 is vague and indefinite because it is not clear whether the "R" in claim 65 and in claim 64 (from which claim 65 depends) are the same or different. Because the specification does not teach the chemical $\text{RCH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_3)_3$, the specification does not provide clarification.

Examiner's Suggestion

8. The Examiner suggests in claim 31, lines 8-10, separating the different components of the non-metallic coating so that it can be determined which components are required in combination and/or in the alternative to one another (i.e., chromium, silicon, and an organic active species are required together, and in the alternative to yttrium -- not chromium, silicon and yttrium together).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 31-32, 36-37, 42-43, 50-52, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Cayless et al. (US 5,013,381).

The claims remain rejected over Cayless et al. for the reasons discussed in section 11 of the prior Office action, as well as for the reasons discussed above.

11. Claims 63-64, 71-72, 77, 79-81, 84, and 90 are rejected under 35 U.S.C. 102(b) as being anticipated by Amort et al. (US 4,118,540).

The claims remain rejected over Amort et al. for the reasons discussed in section 12 of the prior Office action, as well as for the reasons discussed above.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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13. Claims 33-34, 38-41, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cayless et al. (US 5,013,381).

The claims remain rejected over Cayless et al. for the reasons discussed in section 14 of the prior Office action, as well as for the reasons discussed above.

14. Claims 31-34, 36-43, 50-55, 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US 5,725,944) or Heyes (US 5,238,517), taken in view of Cayless et al. (US 5,013,381).

The claims remain rejected for the reasons discussed in section 15 of the prior Office action, as well as for the reasons discussed above.

15. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cayless et al., or over Jones et al. or Heyes in view of Cayless et al., as applied to claim 31 above, and further in view of Baker et al. (US 3,775,151).

The claims remain rejected for the reasons discussed in section 16 of the prior Office action, as well as for the reasons discussed above.

16. Claims 67-68, 73-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amort et al. (US 4,118,540).

The claims remain rejected for the reasons discussed in section 17 of the prior Office action, as well as for the reasons discussed above.

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17. Claims 63-64, 66-69, 71-77, 79-84, and 88-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US 5,725,944) or Heyes (US 5,238,517), taken in view of Amort et al. (US 4,118,540).

The claims remain rejected for the reasons discussed in section 18 of the prior Office action, as well as for the reasons discussed above.

18. Claims 85-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heyes (US 5,238,517), taken in view of Amort et al. (US 4,118,540).

The claims remain rejected for the reasons discussed in section 19 of the prior Office action, as well as for the reasons discussed above.

19. Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amort et al., or over Jones et al. or Heyes in view of Amort et al., as applied to claim 63 above, and further in view of Baker et al. (US 3,775,151).

The claims remain rejected for the reasons discussed in section 20 of the prior Office action, as well as for the reasons discussed above.

Allowable Subject Matter

20. Claim 44, 48, 49, and 78 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 44, 48-49, and 78 are allowable over the prior art for the reasons discussed in sections 21-23 of the prior Office action.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on 571-272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kirsten C Jolley
Patent Examiner
Art Unit 1762

kcj